

## CLAIMS

What is claimed is:

1. A magnetron for microwave ovens, comprising:  
an anode cylinder;  
a plurality of plate-shaped vanes radially arranged along an inside surface of the anode cylinder;  
one or more strap rings to electrically connect the plurality of the vanes to each other;  
and  
an antenna connected to one of the plurality of vanes to radiate microwaves generated from the vanes;  
wherein each of the vanes is plated with a brazing material, having a plating depth of about 2.25  $\mu\text{m}$  to 8  $\mu\text{m}$ , to be brazed to one or more of the anode cylinder, of the one or more strap rings and of the antenna.
2. The magnetron as set forth in claim 1, wherein each of the vanes is entirely plated with the brazing material.
3. The magnetron as set forth in claim 1, wherein the brazing material is plated on joint portions of each of the vanes to which the anode cylinder, the one or more strap rings and the antenna are brazed.
4. The magnetron as set forth in claim 1, wherein the brazing material contains silver of 72 $\pm$ 2% in a weight ratio of the brazing material with copper providing a remaining percentage thereof.
5. The magnetron as set forth in claim 1, wherein the plating depth of the brazing material is about 4 $\mu\text{m}$  to 6  $\mu\text{m}$ .

6. A magnetron for microwave ovens, comprising:
  - an anode cylinder;
  - a plurality of plate-shaped vanes radially arranged along an inside surface of the anode cylinder;
  - one or more strap rings to electrically connect the plurality of the vanes to each other;
  - and
  - an antenna mounted on one of the plurality of vanes to radiate microwaves generated from the vanes;wherein each of the vanes is plated with a brazing material, having a predetermined plating depth to prevent an insufficiency thereof or an excess thereof, to be brazed to one or more of the anode cylinder, the one or more strap rings and the antenna.
7. A magnetron for microwave ovens, comprising:
  - an anode cylinder;
  - a plurality of vanes arranged in a radial direction inside of the anode cylinder, each of the vanes being plated with blazing material having a plating depth of about 2.25  $\mu\text{m}$  to 8  $\mu\text{m}$ ;
  - one or more rings to connect with the plurality of the vanes and to electrically connect the plurality of vanes to each other; and
  - an antenna connected to one of the plurality of vanes and radiating microwaves generated from the plurality of vanes, wherein each of the vanes is brazed to one or more of the anode cylinder, of the one or more rings and of the antenna.
8. The magnetron as set forth in claim 7, wherein each of the vanes is entirely plated with the brazing material.
9. The magnetron as set forth in claim 7, wherein the brazing material is plated on joint portions of each of the vanes to which the anode cylinder, the one or more rings and the antenna are brazed.
10. The magnetron as set forth in claim 7, wherein the brazing material comprises a ratio of silver to copper of between about 2.3 to 2.9 by weight.

11. The magnetron as set forth in claim 7, wherein the brazing material comprises about 70% to 74% silver by weight.

12. The magnetron as set forth in claim 7, wherein the plating depth of the brazing material is about 4 $\mu$ m to 6  $\mu$ m.

13. The magnetron as set forth in claim 7, wherein each of the vanes is formed in rectangular plate shapes and comprises:

a first pair of ring notches formed in a top of each of the vanes to fasten a first pair of the rings to each of the vanes;

a second pair of ring notches formed in a bottom of each of the vanes to fasten a second pair of the rings to each of the vanes; and

an antenna notch formed in one of the vanes to fasten the antenna to the one vane.

14. A magnetron for microwave ovens, comprising:

an anode cylinder;

a plurality of vanes arranged in a radial direction inside of the anode cylinder, each of the vanes being plated with brazing material having a predetermined plating depth to prevent an insufficiency of the brazing material or an excess thereof;

one or more rings to connect with the plurality of the vanes and to electrically connect the plurality of vanes to each other; and

an antenna connected to one of the plurality of vanes and radiating microwaves generated from the plurality of vanes, wherein each of the vanes is brazed to one or more of the anode cylinder, of the one or more rings and of the antenna.

15. A method of forming a magnetron for microwave ovens including an anode cylinder, a plurality of plate-shaped vanes radially arranged along an inside surface of the anode cylinder, one or more rings to electrically connect the plurality of the vanes to each other, and an antenna mounted on one of the plurality of vanes to radiate microwaves generated from the vanes, comprising;

brazing one or more of the anode cylinder, of the one or more rings and of the antenna with brazing material having a predetermined plating depth of about 2.25  $\mu\text{m}$  to 8  $\mu\text{m}$ .

16. A method of forming a magnetron for microwave ovens, comprising:  
forming a plurality of vanes along with brazing material having a plating depth of about 2.25  $\mu\text{m}$  to 8  $\mu\text{m}$ ;  
providing one or more rings, an anode cylinder and an antenna; and  
forming the magnetron by brazing the plurality of vanes inside of the anode cylinder to the one or more rings and one of the vanes to the antenna.

17. The method as set forth in claim 16, wherein the forming of the plurality of vanes comprises  
entirely plating each of the vanes with the brazing material.

18. The method as set forth in claim 16, wherein the forming of the plurality of vanes comprises  
plating only joint portions of each of the vanes to which the anode cylinder, the one or more rings and the antenna are brazed.